

REMARKS

Claims 1 and 4 have been amended as indicated above with support found in the specification for each. Specifically, the use of an electronic shutter in the solid-state image sensing device is disclosed in page 5, lines 26-27. A mechanical shutter, provided between the object and the image sensing device, is disclosed on page 4, lines 27-36.

Further, the language of claim 1 relating to "a shift mechanism to change a relative positional relationship between a passage of light that has passed the mechanical shutter and incident to the solid-state image sensing device and the solid-state image sensing device for a period from a moment in the first exposure period to another moment in the second exposure period," is disclosed with particular reference to Figs. 4 to 6. In other words, either the light passage or the solid-state image sensing device may be shifted. In this regard, the Examiner's suggested title of the invention "solid-state imaging device with a pixel-shifting function" does not seem to be appropriate. But, Applicants have amended the title in a manner deemed to be appropriate.

Further, the amendments to claim 4 to the effect that the mechanical or electronic shutter is switched from a closed state to an open state to start the first exposure period and the mechanical shutter is switched from an open state to a closed state to finish the second exposure period is disclosed on page 8, line 37 to page 9 line 2 and is shown in Figs. 5 and 6.

Claim 3 has been amended and a new claim 6 has been added which discusses the fact that the shift mechanism includes an optical low-pass filter that rotates between two predetermined positions to change the relative positional relationship. The optical low-pass filter starts to rotate at a moment within the first exposure period and stops at another moment within the second exposure period, a period for which the optical low-pass filter rotates in the first exposure period and another period for which the optical low-pass filter rotates in the second exposure period being equal to each other. This matter is disclosed on page 8, lines 24-31.

The Examiner rejected claims 1-5 as being unpatentable over Horii U.S. Patent No. 6,018,363 in view of Yamada et al. U.S. Patent No. 6,577,341.

Referring particularly to claim 1, the Examiner asserts that Horii teaches a solid-state imaging device with different exposures performed for different pixel shifts. Specifically, the Examiner urges that it is inherent that the camera include a shutter provided between the object and the solid-state image sensing device to expose the solid-state image sensing device to the light for a first exposure period and a second exposure period that directly follows the first exposure period. Applicants respectfully disagree with the Examiner on this point. There is no disclosure or teaching in Horii of different exposures performed one after another with no intermission. Further, no disclosure in Horii would lead one skilled in the art to the conclusion that it is inherent that the solid-state imaging device is exposed for a first exposure period and a second exposure period that directly followed the first exposure period. Horii makes no mention at all of the relative timing of subsequent exposure periods. Still further, the embodiment relied on by the Examiner does not disclose a mechanical shutter. In fact, Horii implicitly teaches away from the inclusion of a mechanical shutter used in association with an optical light shifting mechanism by its inclusion of a shutter in 8th embodiment shown in Figs 16 and 18. The 8th embodiment of Horii that includes a shutter, does not include an optical image shifting means between the object and solid-state imaging device. In fact, the image processing means of this embodiment is entirely different than that of the present invention. It is evident that if the embodiment relied on by the Examiner was meant to include a shutter, one would have been provided in the Figures and accompanying specification. As one was not, it is clear that one was not intended, and therefore the Examiner's rejection is not well taken.

The Examiner has acknowledged that Horii does not teach that the multiple exposures are of the same exposure time and argued that Yamada et al. teaches this limitation. Even if Yamada et al. does teach exposure periods having a predetermined time, the rejection is improper as Horii does not disclose a mechanical shutter in conjunction with an incident light shifting means. Further, Horii does not teach or mention the relative timing of exposures.

The new recitations in amended claims 1, 3, and 4 as well as new claim 6 are not disclosed or taught in Horii or Yamada et al. and are therefore

believed patentable. As a result, all claims are in condition of allowance, and reconsideration by the Examiner and the issuance of a formal Notice of Allowance of claims 1, 3, 4 and 6 is most earnestly solicited.

If any further issues remain after this amendment, a telephone call to the undersigned would be appreciated.

Respectfully submitted,



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